REPORT OF THE
CHIEF LEGISLATIVE ANALYST

DATE: April 18, 2023

TO: Honorable Members of the Rules, Elections, and Intergovernmental Relations Committee

FROM: Sharon M. Tso for
Chief Legislative Analyst

Council File No. 23-0002-S34
Assignment No: 23-04-0201

SUBJECT: Resolution to SUPPORT AB 1628 (McKinnor)

CLA RECOMMENDATION: Adopt Resolution (Krekorian – Yaroslavsky) to include in the City's 2023-2024 State Legislative Program, support for AB 1628 (McKinnor), which would require all new washing machines sold for residential, commercial, and state use in California to contain a microfiber filtration system in order to mitigate the effects of microplastics in the environment.

SUMMARY
The Resolution (Krekorian – Yaroslavsky), introduced March 1, 2023, states that global plastic pollution is projected to rise, as new scientific research estimates that plastic production is on track to double by 2030. The Resolution notes that microplastics in particular are posing a tremendous danger to the marine environment, and they have been found to be broadly present in the food chain and in human bodies around the world. The Resolution also states that when clothes containing synthetic fibers are washed, they shed plastic microfibers, one of the most prevalent types of microplastics, which either end up in freshwater systems or the ocean to be found later in tap and bottled water, and even food products. The Resolution continues, noting that even when microfibers are captured by wastewater treatment plants, they can be reintroduced to the natural environment through the spread of sewage sludge as fertilizer, ultimately compromising agricultural fields and food production. The Resolution further states that AB 1628 (McKinnor) has been introduced in the California Assembly to address this matter by requiring all new washing machines sold for residential, commercial, and state use in California on and after January 1, 2029, to contain a microfiber filtration system in order to mitigate the effects of microplastics in the environment.

Therefore, the Resolution requests that the City support AB 1628 (McKinnor), which would require all new washing machines sold for residential, commercial, and state use in California to contain a microfiber filtration system in order to mitigate the effects of microplastics in the environment.

BACKGROUND
In February 2022, the California Ocean Protection Council (OPC) released a Statewide Microplastics Strategy report (Strategy report) that increases understanding of the scale and risks

of microplastics pollution in the marine environment and identifies proposed solutions. According to research reviewed in the Strategy report, an estimated 11 million metric tons of plastic enter the ocean each year worldwide, and without any intervention, this amount is anticipated to triple by 2040. The Strategy report notes that plastics are recognized globally as the most harmful and persistent fraction of marine litter, accounting for at least 85 percent of total marine waste. Over time, plastics break down in aquatic environments into pieces of ever-decreasing size, with those less than 5 millimeters (mm) in size – known as microplastics.

Microplastics fall into two general categories: primary microplastics manufactured at a small size (e.g. preproduction plastic pellets used in manufacturing or microbeads in personal care products) or secondary microplastics that result from the breakdown of larger plastics. Microplastics have a range of polymer types, sizes, shapes, and associated chemicals, with irregular shapes and fibers found increasingly in marine organisms, including mammals, fish, mollusks, and crustaceans.

Microplastics have been found nearly everywhere scientists have looked including mountain streams, agricultural soil, and even within human placenta, stool samples, and lung tissue. Microplastics can enter the food web, where plastic particles can transfer into tissue, and expose humans to plastic-associated and endocrine-disrupting chemicals from seafood consumption. AB 1628 is aligned with one of the Strategy report's suggested early actions which recommends that the state promote, or otherwise require, the sale and use of condenser dryers and washing machines with filtration rates of 100 microns or smaller, and develop a program to incentivize post-market retrofits or purchases through rebates and other mechanisms by 2024.

According to the United States Environmental Protection Agency (US EPA), clothes made from synthetic material constitute a major source of plastic pollution. The US EPA maintains that the majority of clothing on the planet is made from plastic-based materials like polyester, rayon, nylon, and acrylic; and when washed, synthetic clothing sheds tiny plastic fragments known as microfibers. The US EPA states that microfibers are the most prevalent type of microplastic found in the environment.

As a result of a Strategy report recommendation, AB 1628 (McKinnor) would require all new washing machines sold for residential, commercial, and state use in California to contain a microfiber filtration system with a mesh size of 100 microns or smaller in order to mitigate the effects of microplastics in the environment.

DEPARTMENTS NOTIFIED

None

BILL STATUS

03/09/23	Referred to Assembly Committee on Environmental Safety & Toxic Materials
03/29/23	Referred to Assembly Committee on Appropriations

CD Fields

Christopher Fields
Analyst

Attachment: 1. Resolution (Krekorian – Yaroslavsky)
2. AB 1628 (McKinnor)

RULES, ELECTIONS, INTERGOVERNMENTAL RELATIONS

RESOLUTION

WHEREAS, any official position of the City of Los Angeles with respect to legislation, rules, regulations, or policies proposed to or pending before a local, state, or federal government body or agency must have first been adopted in the form of a Resolution by the City Council; and

WHEREAS, the world is facing a plastic pollution crisis, with new scientific research estimating that plastic production is on track to double by 2030; and

WHEREAS, microplastics in particular are posing a tremendous danger to the marine environment and they have been found to be broadly present in the food chain and in human bodies around the world; and

WHEREAS, when clothes containing synthetic fibers are washed they shed plastic microfibers, one of the most prevalent types of microplastics, that either end up in freshwater systems or the ocean to be found later in tap and bottled water, and even food products; and

WHEREAS, even when microfibers are captured by wastewater treatment plants, they can be reintroduced to the natural environment through the spread of sewage sludge as fertilizer, ultimately compromising agricultural fields and food production; and

WHEREAS, AB 1628 (McKinnor), currently pending before the State Assembly, would require all new washing machines sold for residential, commercial, and state use in California on and after January 1, 2029, to contain a microfiber filtration system in order to mitigate the effects of microplastics in the environment;

NOW, THEREFORE, BE IT RESOLVED, that by the adoption of this Resolution, the City of Los Angeles hereby includes in its 2023-2024 State Legislative Program support of AB 1628 (McKinnor), which would require all new washing machines sold for residential, commercial, and state use in California to contain a microfiber filtration system in order to mitigate the effects of microplastics in the environment.

PRESENTED BY: Paul Krekorian
PAUL KREKORIAN
Councilmember, 2nd District

SECONDED BY: Katharine Gorshowsky

ORIGINAL

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MAR 0 1 2023

AMENDED IN ASSEMBLY MARCH 22, 2023

CALIFORNIA LEGISLATURE—2023–24 REGULAR SESSION

ASSEMBLY BILL No. 1628

Introduced by Assembly Member McKinnor
(Coauthor: Assembly Member Bauer-Kahan)

February 17, 2023

An act to add Chapter 11 (commencing with Section 119425) to Part 15 of Division 104 of the Health and Safety Code, relating to environmental health.

LEGISLATIVE COUNSEL'S DIGEST

AB 1628, as amended, McKinnor. Microfiber filtration.

Existing law, to protect public health and water quality, regulates a broad range of consumer products and processes, including water softeners, water treatment devices, and backflow prevention devices, among others.

This bill would require, on and after January 1, 2029, *that* all new washing machines ~~sold~~ *offered for sale in California* for residential, commercial, ~~and~~ *or* state use ~~in California~~ contain a microfiber filtration ~~system with an unspecified filtration rate or an unspecified mesh size.~~ *system, as defined, with a mesh size not greater than 100 micrometers.* The bill would also include legislative findings and declarations.

Vote: majority. Appropriation: no. Fiscal committee: yes. State-mandated local program: no.

The people of the State of California do enact as follows:

SECTION 1. The Legislature finds and declares all of the following:

(a) California is in the midst of a plastic pollution crisis with plastics of all sizes, from milk jugs to nylon fibers, increasingly accumulating in our natural environment. New scientific research estimates that under the current trajectory, plastic production will double by 2030. While all shapes and sizes of plastic pollution and waste are problematic, microplastics, which are small plastic pieces that are less than five millimeters in size, are a largely invisible and particularly challenging form of plastic pollution to address. Microplastics are highly mobile, distribute easily and widely, and are nearly impossible to capture once released into the environment.

(b) Californians are exposed to microplastics through the air we breathe, the water we drink, and the food we eat. Researchers have estimated that Americans ingest tens of thousands of microplastic particles per person each year through foods, including fruits, vegetables, meats, table salt, honey, and beverages like beer and water. Microplastics have been detected in human pulmonary tissues, intestines, and even placentas. While the long-term health impacts of human ingestion of microplastics are still an area of active research, the ubiquity of microplastics in the environment raises concerns about plastic ingestion.

(c) Synthetic microfibers, shed or fragmented from polyester, nylon, or rayon clothing and textiles, are one of the most abundant and ubiquitous types of microplastic. With global production of synthetic textiles expected to triple by 2050, microfiber pollution in California is expected to continue to grow. Additionally, there are approximately 11,000,000 residential and 600,000 commercial washing machines operating in California. Without intervention, it is estimated that annual microfiber emissions to California's natural environments from machine washing of synthetic textiles will continue to increase.

(d) Microfibers may be the most prevalent type of microplastic found in oceans. In a study conducted in San Francisco Bay, microfiber concentrations in surface waters reached 580,000 particles per square kilometer compared to 520,000 particles per square kilometer for all nonfiber particles combined, including tire wear fragments, films, spheres, and foam pieces.

(e) Microfibers, given their shape, may be the most readily absorbable of the types of microplastics. In marine and freshwater systems, synthetic fibers, relative to other forms of microplastics,

appear to have higher potential for entering the food chain because their size and form allow them to be readily consumed by aquatic animals and to be more prone to entanglement and gut retention.

(f) In addition, like all microplastics, microfibers can serve as a vector for the dyes, flame retardants, and waterproof chemicals associated with them, and also for additional harmful chemicals. With a high surface-to-volume ratio, microfibers in particular can absorb a wide range of toxins, and therefore serve as a vehicle for introducing additional waterborne toxins into the food chain.

(g) In California, the majority, estimated at 94 percent, of synthetic microfibers are fairly effectively captured by wastewater treatment plants in sewage sludge, known as biosolids. Many of these microfibers, however, are then released into the natural environment through the spreading of biosolids on agricultural lands, and to a lesser degree through the use of recycled wastewater on agricultural fields.

(h) When biosolids are applied to agricultural fields, microfibers can accumulate in the soil where they are nearly impossible to eliminate. Microfibers can be taken up by plants, resulting in decreased growth rates and nutrient uptake, diminished food production yields, and irreversible damage to terrestrial ecosystems and soil health. The presence of microfibers can increase the uptake of toxic chemicals by plants, posing further concerns about food safety and human health impacts.

(i) The pattern of spreading microfiber-laced biosolids onto California's agricultural fields, primarily fields for livestock feed, has significant environmental justice implications. Notably, this current practice directs the flow of microfibers from high-population and higher income urban counties to lower income rural communities residing near agricultural lands, potentially exposing agricultural workers and adjacent communities.

(j) California has proven to be a national leader on controlling plastic pollution. Among other important actions, the state has passed a ban on microbeads in wash-off products like face scrubs and toothpaste, and on the distribution of single-use plastic bags, as well as comprehensive extended producer responsibility and source reduction legislation. In addition, as part of ensuring safe drinking water for all Californians, the State Water Resources Control Board is creating the first standardized methods for testing microplastics in drinking water, and leveraging the latest research

to better monitor and identify the sources of microplastics in drinking water. The Ocean Protection Council has also prioritized the need to address microfiber pollution through requiring use of filters in washing machines in their Statewide Microplastics Strategy.

(k) Research suggests microfiber capture filters added to clothes washers can dramatically reduce the number of microfibers that enter wastewater treatment plants and surface waters. A study suggested that full adoption of filters across washing machines in California decreased annual synthetic microfiber emissions to natural environments by almost 80 percent.

(l) Policies are being considered and adopted around the globe to address the use of microfiber capture. France recently passed a law requiring all new clothes washers sold in France to be equipped with built-in filters by 2025.

(m) Washing machine filtration systems are an effective strategy for capturing microfibers, with research showing microfiber filtration rates ranging from 70 percent to nearly 90 percent. Washing machines with built-in filters are already widely available in Japan among manufacturers like Hitachi, Panasonic, and Toshiba. Energy-efficient clothes washers with built-in microfiber filters are also commercially available in Europe, and some washers with built-in microfiber filters are also available at a smaller scale in the United States.

(n) While interventions to address microfiber pollution are needed across the full life cycle of synthetic textiles, filtration technologies provide a critical and near-term solution to reduce the amount of microfibers released into California's lands and waters.

~~SECTION 1.~~

SEC. 2. Chapter 11 (commencing with Section 119425) is added to Part 15 of Division 104 of the Health and Safety Code, to read:

CHAPTER 11. MICROFIBER FILTRATION

~~119425. The Legislature finds and declares all of the following:~~

~~(a) California is in the midst of a plastic pollution crisis with plastics of all sizes—from milk jugs to nylon fibers—increasingly accumulating in our natural environment. New scientific research~~

~~estimates that under the current trajectory, plastic production will double by 2030. While all shapes and sizes of plastic pollution and waste are problematic, microplastics, which are small plastic pieces that are less than 5 mm in size, are a largely invisible and particularly challenging form of plastic pollution to address. Microplastics are highly mobile, distribute easily and widely, and are nearly impossible to capture once released into the environment.~~

~~(b) Californians are exposed to microplastics through the air we breathe, the water we drink, and the food we eat. Researchers have estimated that Americans ingest tens of thousands of microplastic particles per person each year through foods including fruits, vegetables, meats, table salt, honey, and beverages like beer and water. Microplastics have been detected in human pulmonary tissues, intestines, and even placentas. While the long-term health impacts of human ingestion of microplastics are still an area of active research, the ubiquity of microplastics in the environment raises concerns about plastic ingestion.~~

~~(c) Synthetic microfibers—shed or fragmented from polyester, nylon or rayon clothing and textiles—are one of the most abundant and ubiquitous types of microplastic. With global production of synthetic textiles expected to triple by 2050, microfiber pollution in California is expected to continue to grow. Additionally, there are approximately 11,000,000 residential and 600,000 commercial washing machines operating in California. Without intervention, it is estimated that annual microfiber emissions to California's natural environments from machine washing of synthetic textiles will continue to increase.~~

~~(d) Microfibers may be the most prevalent type of microplastic found in oceans. In a study conducted in San Francisco Bay, microfiber concentrations in surface waters reached 580,000 particles per square kilometer compared to 520,000 particles per square kilometer for all nonfiber particles combined, including tire wear fragments, films, spheres, and foam pieces.~~

~~(e) Microfibers, given their shape, may be the most readily absorbable of the types of microplastics. In marine and freshwater systems, synthetic fibers, relative to other forms of microplastics, appear to have higher potential for entering the food chain because their size and form allow them to be readily consumed by aquatic animals and to be more prone to entanglement and gut retention.~~

~~(f) In addition, like all microplastics, microfibers can serve as a vector for the dyes, flame retardants, and waterproof chemicals associated with them, and also for additional harmful chemicals. With a high surface-to-volume ratio, microfibers in particular can absorb a wide range of toxins, and therefore serve a vehicle for introducing additional waterborne toxins into the food chain.~~

~~(g) In California, the majority, estimated at 94 percent, of synthetic microfibers are fairly effectively captured by wastewater treatment plants in sewage sludge, known as biosolids. Many of these microfibers, however, are then released into the natural environment through the spreading of biosolids on agricultural lands, and to a lesser degree through the use of recycled wastewater on agricultural fields.~~

~~(h) When biosolids are applied to agricultural fields, microfibers can accumulate in the soil where they are nearly impossible to eliminate. Microfibers can be taken up by plants, resulting in decreased growth rates and nutrient uptake, diminished food production yields, and irreversible damage to terrestrial ecosystems and soil health. The presence of microfibers can increase the uptake of toxic chemicals by plants, posing further concerns about food safety and human health impacts.~~

~~(i) The pattern of spreading microfiber-laced biosolids onto California's agricultural fields—primarily fields for livestock feed—has significant environmental justice implications. Notably, this current practice directs the flow of microfibers from high-population and higher income urban counties to lower income rural communities residing near agricultural lands, potentially exposing agricultural works and adjacent communities.~~

~~(j) California has proven to be a national leader on controlling plastic pollution. Among other important actions, the state has passed a ban on microbeads in wash-off products like face scrubs and toothpaste, and on the distribution of single-use plastic bags, as well as comprehensive extended producer responsibility and source reduction legislation. In addition, as part of ensuring safe drinking water for all Californians, the State Water Resources Control Board is creating the first standardized methods for testing microplastics in drinking water, and leveraging the latest research to better monitor and identify the sources of microplastics in drinking water. The Ocean Protection Council has also prioritized the need to address microfibers pollution through requiring use of~~

~~filters in washing machines in their Statewide Microplastics Strategy.~~

~~(k) Research suggests microfiber capture filters added to clothes washers can dramatically reduce the number of microfibers that enter wastewater treatment plants and surface waters. A study suggested that full adoption of filters across washing machines in California decreased annual synthetic microfiber emissions to natural environments by almost 80 percent.~~

~~(l)~~ ~~Policies are being considered and adopted around the globe to address the use of microfiber capture. France recently passed a law requiring all new clothes washers sold in France to be equipped with built-in filters by 2025.~~

~~(m) A variety of filtration technologies, which could be used in-washer, installed on the out, or built directly into washing machines, already exist that are capable of effectively capturing microfibers before they can enter the environment. Washing machines with built-in filters are already widely available in Japan among manufacturers like Hitachi, Panasonic, and Toshiba. Energy efficient clothes washers with built-in microfiber filters are also commercially available in Europe, and some washers with built-in microfiber filters are also available at a smaller scale in the United States.~~

~~(n) While interventions to address microfiber pollution are needed across the full life cycle of synthetic textiles, filtration technologies provide a critical and near-term solution to reduce the amount of microfibers released into California's lands and waters.~~

~~119426.~~

119425. *(a)* On and after January 1, 2029, ~~all new washing machines sold~~ *a new washing machine offered for sale in the state* for residential, commercial, ~~and~~ *or* state use ~~in this state~~ shall contain a microfiber filtration system with a ~~filtration rate of ____ or~~ mesh size of not greater than ____ *100* micrometers.

(b) For purposes of this chapter, "microfiber filtration system" means a filtration unit that is active across all washing cycles and meets either of the following:

(1) The unit is integrated into the washing machine design as a built-in filter.

(2) The unit is included as an in-line filter and is packaged, sold, and installed with the washing machine.

REVISIONS:

Heading—Line 2.

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